

Remarks

Claims 1 to 40 are pending. Claims 31 to 40 have been withdrawn from consideration. Claims 1-3, 6, 7, 12, 16, 18, and 23-28 have been amended.

Claim 1 was amended for clarity, replacing the phrase "first semi-crystalline fluorinated copolymer" with the phrase "a first fluoropolymer, wherein the first fluoropolymer is a semi-crystalline fluorinated copolymer." Claims 2-3, 12, 16, and 18 were amended to replace the phrase "fluorinated copolymer" with the phrase "fluoropolymer," to be consistent with the terminology of claim 1. (Support for these amendments can be found at, e.g., page 6, lines 21-23.)

Claim 1 was amended to provide that fluoropolymers of class (b) may optionally contain perfluorobutyl-ethylene and/or no more than about 1% by weight of other partially fluorinated monomers. Support for this amendment can be found at page 5, lines 33 – page 6, line 7.

Claim 1 was also amended to provide that, when the composition comprises one or more copolymers selected from (c), the composition comprises either: at least about 80% by weight of copolymers selected from (c) (see, page 7, lines 1-2) or no more than about 5% by weight of copolymers selected from (c) (see, page 7, lines 12-13).

Claim 6 was amended to insert the numbers "(i)" and "(ii)" to further clarify the claim.

Claim 7 was amended to insert the word "essentially" to be consistent with the terminology of claim 6, from which it depends.

Claim 23 was amended to replace the word "minor" with the word "second" to be consistent with the terminology of claim 1, from which it depends.

Claim 24 was amended to replace the phrase "semi-crystalline fluorinated copolymer" with the phrase "first fluoropolymer, wherein the first fluoropolymer is a semi-crystalline fluorinated copolymer." Claim 24 was also amended to insert the term "second" before the term "fluoropolymer." Support for these amendments can be found in claims 24 as originally presented; and at, e.g., page 6, lines 21-23. Claim 24 was also amended to provide that no more than 5% by weight of (b) may be present in the second fluoropolymer. Support for this amendment can be found at page 7, lines 12-13.

Claims 25-28 were amended to replace the word "minor" with the word "second" to be consistent with the terminology of claim 24, from which they depend.

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Applicants submit that no new matter has been added.

§ 112 Rejections

Claims 1-30 stand rejected under 35 U.S.C. 112, second paragraph, as purportedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Patent Office asserts that the claim states what the second polymer is when the first polymer is (b) or (c), but says nothing about the cases in which the first polymer is (a) or (d). The Patent Office also asks "Can the compositions/articles contain two polymer (a)'s? Two polymer (d)'s?"

First, Applicants respectfully submit that the claims, as presented, clearly describe the case when (a) is the first polymer. (See, e.g. claim 1, as originally presented, at page 19, lines 11-12.)

Second, the claims require a first fluoropolymer selected from a semi-crystalline fluorinated copolymer. (See, e.g., claim 1, emphasis added.) Applicants respectfully submit that, because (d) is an amorphous copolymer (see, e.g., claim 1), it does not meet this requirement.

Third, Applicants respectfully submit that, although the compositions/articles of the present invention may contain two polymers selected from class (a) and/or two or more polymers selected from class (d), the claims as drafted are not rendered indefinite. Rather, as the claims clearly require, the compositions/articles of the present invention employ materials from two different categories. For example, as provided in claim 1, if the first fluoropolymer is selected from class (a), then the second fluoropolymer must be selected from class (b) and/or class (c).

Claims 3-5, 7, 9-11, 13, 15, 17-20 and 22 stand rejected under 35 U.S.C. 112, second paragraph, as purportedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Patent Office asks "What do the abbreviated terms mean?"

Applicants respectfully submit that the abbreviations used are commonly known by those of ordinary skill in the art. In addition, a definition for each of the abbreviations is provided in the specification. (See the table below.) Applicants believe that the use of abbreviations makes

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the claims easier to read without sacrificing clarity. However, if the Patent Office believes that greater clarity would result from replacing the abbreviations, Applicants will do so in a subsequent amendment.

TFE	tetrafluoroethylene	page 4, lines 22-23
HFP	hexafluoropropylene	page 4, line 28
PAVE	perfluoroalkyl vinyl ethers	page 4, lines 28-29
PFBE	perfluorobutyl-ethylene	page 6, line 5
PPVE-1	CF ₂ =CFOCF ₂ CF ₂ CF ₃	page 5, line 3
VF2	vinylidene fluoride	page 5, line 34

In summary, Applicants submit that the rejections of claims 1-30 under 35 USC § 112, second paragraph, are unwarranted, and should be withdrawn.

§ 102 Rejections

Claims 1, 12-18, 21, 29, and 30 stand rejected under 35 USC § 102(b) as purportedly being anticipated by Blong et al. (US 5,710,217).

The present invention provides a melt processable fluorothermoplastic composition comprising a major amount of a first semi-crystalline fluoropolymer and a minor amount of a second fluoropolymer effective to reduce melt defects in the composition. (See, e.g., claim 1, as amended.)

In contrast, Blong describes admixing a minor amount of fluoropolymer processing aid with a major amount of a thermoplastic hydrocarbon polymer. (See, col. 2, lines 38-44, emphasis added.) Blong states that these compositions are effective in reducing melt defects in the thermoplastic hydrocarbons. (See, col. 4, lines 2-4, emphasis added.)

Applicants respectfully submit that the Patent Office has not shown that each element of the claimed invention is present in the cited reference. For example, the Patent Office has not shown that Blong describes that melt defects can be reduced by blending a minor amount of a fluoropolymer selected from one class into a fluoropolymer selected from a second, different class, as provided in the present invention. (See, e.g., claim 1)

For at least this reason, the rejection of claim 1, under 35 USC § 102(b) as purportedly being anticipated by Blong is unwarranted and should be withdrawn.

Claims 12-18, 21, 29 and 30 each add additional features to claim 1. Claim 1 is patentable for the reasons given above. Thus, claims 12-18, 21, 29 and 30 are likewise patentable.

In summary, the rejection of claims 1, 12-18, 21, 29, and 30 under 35 USC § 102(b) as purportedly being anticipated by Blong et al. (US 5,710,217) is unwarranted and should be withdrawn.

§ 103 Rejections

Claims 1-30 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Blong et al. (US 5,710,217).

Applicants respectfully submit that the Patent Office has failed to show how the cited reference teaches or suggests all of the claim limitations. As discussed above, the Patent Office has not shown that Blong describes, teaches or suggests that melt defects can be reduced by blending a

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minor amount of a fluoropolymer selected from one class into a fluoropolymer selected from a second, different class, as provided in the present invention. Thus, the Patent Office has failed to meet its burden in establishing a *prima facie* case of obviousness.

For at least this reason, the rejection of claim 1 under 35 USC § 103(a) as being unpatentable over Blong et al. has been overcome and should be withdrawn.

Claims 2-30 each add additional features to claim 1. Claim 1 is patentable for the reasons given above. Thus, claims 2-30 are likewise patentable.

In summary, the rejection of claims 1-30 under 35 USC § 103(a) as being unpatentable over Blong et al. (US 5,710,217) has been overcome and should be withdrawn.

Claims 1-30 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Parsonage et al. (US 6,117,508).

Parsonage describes a composite article comprising a blend component. The blend component includes a vinylidene-fluoride (VDF) containing fluoropolymer and a substantially non-vinylidene (non-VDF) containing fluoropolymer. (See, col. 2, line 66 – col. 3, line 8.)

According to Parsonage, the VDF-containing fluoropolymer comprises at least 3% by weight interpolymerized units derived from VDF or other monomers with similar reactivity. (See, col. 5, lines 2-5, emphasis added.) Applicants submit that this polymer cannot be a perfluorinated copolymer, and therefore it is not a member of class (a) as provided in the present invention. (See, claim 1.) As amended, claim 1 provides that the fluoropolymers of class (b) may comprise no more than about 1% by weight of partially fluorinated monomers (e.g., VDF). Thus, the VDF-containing fluoropolymer of Parsonage cannot be a member of class (b). Finally, the VDF-containing fluoropolymer of Parsonage cannot be a member of class (d), which requires an amorphous copolymer of tetrafluoroethylene and hexafluoropropylene. (See, claim 1, as amended.) In summary, Applicants submit that the VDF-containing fluoropolymer of Parsonage cannot be a member of classes (a), (b), or (d) of claim 1.

Assuming arguendo that the VDF-containing fluoropolymer could be selected such that it were a member of class (c), it might be thought that it could be used as either the first or second fluoropolymer of the present invention. However, as claim 1 provides, if copolymers of class (c) are present, they must compose either at least 80% by weight or no more than 5% by weight of the

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composition. (See, claim 1, as amended. See, also, page 6, line 23 – page 7, line 3 (describing levels of the first fluoropolymer) and page 7, lines 12-16 (describing levels of the second fluoropolymer).) In contrast, Parsonage describes blends outside the required range. (See, col. 7, lines 44-50.) Thus, the VDF-containing fluoropolymer of Parsonage could not be used as a fluoropolymer of class (c) at the levels required for the present invention.

The Patent Office acknowledged that Parsonage does not describe the monomer amounts required. (See, Paper 6, page 8, lines 14-15.) The Patent Office asserted that it would have been obvious to one of ordinary skill in the art to employ suitable amounts of monomers, with the purported motivation being to improve peel strengths. However, Parsonage only describes, teaches or suggests ranges outside that required by the present invention, and the more preferred range teaches away from exploring the ranges required by the present invention. (See, col. 7, lines 46-53.) Thus, there is motivation to deviate from Parsonage ranges and the Patent Office has not shown that the VDF-containing fluoropolymer of Parsonage fulfills the requirements of the present invention.

As discussed, Parsonage describes a blend component that includes a vinylidene-fluoride (VDF) containing fluoropolymer and a substantially non-vinylidene (non-VDF) containing fluoropolymer. Also, as discussed, the Patent Office has not shown that the VDF-containing fluoropolymer of Parsonage could fulfill the requirements of the present invention. Therefore, regardless of which class of the present invention the non-VDF containing fluoropolymer of Parsonage might be, the Patent Office has not shown that Parsonage describes, teaches or suggests a composition or blend comprising fluoropolymers selected from two of the classes of the present invention, as required. (See, e.g., claim 1.)

For at least this reason, the rejection of claim 1 under 35 USC § 103(a) as being unpatentable over Parsonage et al. has been overcome and should be withdrawn.

Claims 2-30 each add additional features to claim 1. Claim 1 is patentable for the reasons given above. Thus, claims 2-23, 29 and 30 are likewise patentable.

In summary, the rejection of claims 1-30 under 35 USC § 103(a) as being unpatentable over Parsonage et al. (US 6,117,508) has been overcome and should be withdrawn.

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In view of the above, it is submitted that the application is in condition for allowance.
Reconsideration of the application is requested.

Allowance of claims 1-30, as amended, at an early date is solicited.

Respectfully submitted,

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